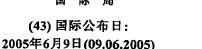
(12) 按照专利合作条约所公布的国际申请

(19) 世界知识产权组织 国际局





- 1 1881 | 1881 | 1881 | 1882 | 1883 | 1884 | 1883 | 1884 | 1885 | 1885 | 1885 | 1885 | 1885 | 1885 | 1885 | 1

(10) 国际公布号: PCT WO 2005/052206 A1

(51) 国际分类号7:

C22C 38/02, C21D 1/00

(21) 国际申请号:

PCT/CN2004/001317

(22) 国际申请日:

2004年11月19日(19.11.2004)

(25) 申请语言:

中文

(26) 公布语言:

中文

(30) 优先权:

200310108897.1

2003年11月27日(27.11.2003) CN

- (71)(72) 发明人/申请人: 林栋樑(LIN, Dongliang) [CN/CN]; 林晖(LIN, Hui) [CN/CN]; 中国上海市淮海中路1950 弃1号6室, Shanghai 200052 (CN)。
- (74) 代理人: 上海隆天新高专利商标代理有限公司 (LUNGTIN SINKO IP ATTORNEYS, LTD.); 中国 上海市复兴中路1号申能国际大厦1401-1402室, Shanghai 200021 (CN)。
- (81) 指定国(除另有指明, 要求每一种可提供的国家保护): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,

LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

(84) 指定国(除另有指明,要求每一种可提供的地区保护): ARIPO(BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), 欧亚专利(AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), 欧洲专利(AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

根据细则4.17的声明:

- 关于申请人在国际申请日有权申请并被授予专利(细则 4.17(ii))对除美国以外的所有指定国
- 发明人资格(细则4.17(iv))仅对美国

本国际公布:

— 包括国际检索报告。

所引用双字母代码和其它缩写符号,请参考刊登在每期 PCT公报期刊起始的"代码及缩写符号简要说明"。

(54) Title: HIGH SILICON STEEL AND ITS MANUFACTURE PROCESS

(54) 发明名称: 高硅钢及其制备方法

(57) Abstract: The present invention concerns a high silicon steel and its manufacture process, which relates to the field of material making. The high silicon steel comprises (by wt.)5-10% silicon, 0.007-1% carbon; less than 0.01% impurities consisting of one or more of Mn, P, S, Cr and Ni; and balance Fe. The process comprises the steps of adding 0.01-1% carbon to a high silicon steel comprising 5%-10% silicon, subjecting the steel to a homogenizing heat treatment in a protective atmosphere i.e. a solutionizing treatment between 1200°C and the temperature below the melting point of the steel, and constant-temp annealing the steel to eliminate most of the second phase in the silicon steel. The tensile ductility and workability of the silicon steel could be remarkably improved, as a result, it makes mass production of high silicon sheet with various thickness possible. The present invention is useful for producing high silicon steel sheet and controlling its microstructure, also it could adjust final carbon content to obtain a high silicon steel sheet with optimal soft magnetism characteristics. The carbon-containing high silicon steel sheet could be utilized as a high strength constructional material at room and moderate temperature in oxidizing and corrosive atmosphere.

(57) 摘要

一种高硅钢及其制备方法。属于材料制备领域。高硅钢包含的各个成分及其重量百分比为: 5-10%硅, 0.007-1%碳、杂质 Mn 和/或 P 和/或 S 和/或 Cr 和/或 Ni 含量小于 0.01%,其余为铁。其制备方法是: 在5%-10%含硅量的高硅钢中加入 0.01-1%碳,并对高硅钢的样品进行均匀化热处理,即从 1200°C 至低于钢熔点的固熔热处理,保温退火消除高硅钢中大部分第二相,均匀化退火在保护气氛中进行。本发明显著改善了硅钢拉伸塑性和加工性能,从而令不同厚度高硅钢片的大规模生产成为可能,不仅可用于生产高硅钢片和控制其显微组织,且可调整最终碳含量,得到高硅钢片的最佳软磁性能。含碳的高硅钢片可作为高强度结构材料,在室温和中温下,氧化和腐蚀气氛下使用。

WO 2005/052206 A1